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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/705,351	11/03/2000	Yuichi Ijiri	4296-125	6855

7590 04/26/2007  
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EXAMINER

FORD, JOHN K

ART UNIT PAPER NUMBER

3744

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/26/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

09/705,351

Applicant(s)

IJIRI ET AL.

Examiner

John K. Ford

Art Unit

3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 3/28/07 by certificate of mail.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 5, 18, 25-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 18, 25-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 3744

Applicant's response of March 28, 2007 has been carefully studied. In a nutshell, that amendment is substantially the same as the amendment after final received February 26, 2007 except that applicant has removed the "stirrer" from claim 27 and claimed the action of stirring using "configured such that" language, which the examiner views as functional in nature and that applicant maintains is structural in nature.

Applicant has also clarified that the elected species is that of Figures 2 and 10, not Figures 3 and 10, as stated by the examiner. The examiner has reviewed the file very carefully and applicant is indeed correct.

Applicant is reminded of the duty of disclosure. Ogata USP 6,582,667 appears to share a common inventor with this application and the materiality and relevance of Figures 3 and 4B of Ogata to amended claim 1 is beyond question. Please have applicant and the assignee review their patent portfolio for any other relevant prior art and cite it in response to this office action.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5, to the extent that it continues to claim a "spiral heat exchanger" conflicts with claim 1. Claim 1 explicitly requires "an upper tube sheet" and "a tube". The "spiral heat exchanger" embodiment does not have "an upper tube sheet" and therefore cannot properly depend from claim 1. Dependent claims cannot remove structure from the antecedent claim and replace it with other structure. To overcome this rejection the spiral heat exchanger limitation must be cancelled from claim 5.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of either Deuse (USP 4,236,576) or McNeal (USP 2,181,704) and Ogata (USP 6,582,667).

To have formed either of the upper vent conduits of McNeal or Deuse as taught by Figures 3 and 4B of Ogata (conduit 14) would have been obvious to one of ordinary skill in the art for the purpose improving the ease of welding to the upper tube plate and ease of degassing (as disclosed in col. 5, lines 65-67 of Ogata).

Claims 18 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art as applied to claims 1 and 5 above, and further in view of Brucher et al (USP 5,035,283).

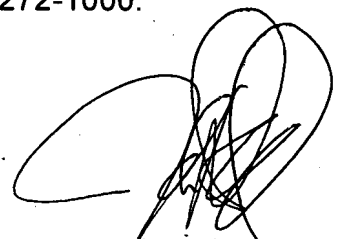
Figure 1 of Burcher shows a "drain pipe" with an inlet portion 11, an annular portion 10, lower tube sheet portion 7 and outlet portion 23 and the "other end" of which is connected to shell 2 (where pipe 23 connects to shell 2 which passes the same fluid as the drain pipe). To have provided either of Deuse/Ogata or McNeal/Ogata with a bottom tube sheet and drain pipe construction such as disclosed by Burcher at 11, 7, 10 and 23 to allow for high temperature operation would have been obvious to one of ordinary skill in the art. Alternatively, to have provided Burcher with a top tube sheet construction and upper vent as disclosed in either Deuse/Ogata or McNeal/Ogata would have been obvious to one of ordinary skill in the art to advantageously improve heat transfer by venting non-condensable gasses. Regarding claim 25, see valve 61 of McNeal. Regarding claim 26, intended fluids to be used in an apparatus do not impart patentability to an otherwise known or obvious apparatus. See MPEP 2114, incorporated here by reference. The apparatus does not undergo a metamorphosis into a new apparatus merely by affixing instructions to it to use it with polymerizable substances. Likewise, the intended manner of operating the device in regard to claim 27 does not impart patentability to an apparatus claim. See MPEP 2114. Finally, the stirring will be inherent any time fluid is added to the shell side of the heat exchanger in

that the fluid already inside the shell will be displaced and agitated by the newly added fluid (i.e. "stirred", in the broadest sense).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John K. Ford whose telephone number is 571-272-4911. The examiner can normally be reached on Mon.-Fri. 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



**John K. Ford**  
Primary Examiner